

03500.018109

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
TETSUYA YANO ET AL.	)	Examiner: Not Yet Assigned
Application No.: 10/553,221	)	Group Art Unit: 1615
International Appln. No. PCT/JP2004/006296)	)	Confirmation No. 9077
Filed: April 30, 2004	)	
For: POLYHYDROXYALKANOATE-	)	
CONTAINING MAGNETIC	)	
STRUCTURE, AND	)	
MANUFACTURING METHOD	)	
AND USE THEREOF	)	November 28, 2006

**Mail Stop PCT**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SECOND INFORMATION DISCLOSURE STATEMENT

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the documents listed on the attached Form PTO-1449. Since the U.S. Patent and Trademark Office waived the requirement under 37 C.F.R. § 1.98 (a)(2)(i) for submitting a copy of each cited U.S. patent and each U.S. patent application publication for all U.S. national patent applications and for all international applications that have entered the national stage under 35 U.S.C. § 371, no copies of such documents are submitted herewith. Copies of the other documents are provided.

The Examiner's attention is also directed to the following U.S. Application:

<u>APPLICATION NO.</u>	<u>FILING DATE</u>	<u>GROUP ART UNIT</u>
10/544,942	May 6, 2004	1641

Since this application is stored in the U.S. Patent and Trademark Office's IFW system, a copy thereof is not submitted due to a *sua sponte* waiver of 37 C.F.R. § 1.98(a)(2)(iii).

The concise explanation of relevance for the non-English documents may be found, *inter alia*, in the English language abstracts attached thereto and/or in the specification where they are cited. In addition, the concise explanation of relevance for some of the non-English patent documents may be found in related English language publications, as noted in the following Table.

<b>Foreign Publication</b>	<b>English-Language Publication</b>
JP 4-3088	U.S. Patent No. 4,358,388
JP 5-10808	U.S. Patent Nos. 4,654,267 and 4,774,265
JP 6-15604 B2	U.S. Patent Nos. 4,393,167 and 4,477,654
JP 7-14352 and JP 8-19227	U.S. Patent No. 4,876,331
JP 5-93049	U.S. Patent No. 5,292,860
JP 2642937	U.S. Patent Nos. 5,135,859 and 5,334,698
JP 5-7492	U.S. Patent No. 5,200,332
JP 1-57087 and JP 60-100516	U.S. Patent Nos. 4,652,441; 4,711,782; 4,917,893; 5,061,492; 5,476,663; 5,631,020; and 5,631,021
JP 8-151322	U. S. Patent No. 6,113,941
JP 8-217691	EP 0 647 449 A1; EP 1 002 529 A1; and WO 96/7399 A1
WO 94/10982 A1	U.S. Patent No. 5,656,299
JP 11-199514	EP 0 945 137 A1
JP 62-201816	U.S. Patent Nos. 4,954,298; and 5,330,767
JP 2-124814	U.S. Patent No. 5,271,945
JP 4-321622	U.S. Patent Nos. 5,480,656; 5,643,607; and 5,814,342
JP 57-118512	U.S. Patent No. 4,675,189

JP 8-151321	U.S. Patent No. 6,117,455
JP 2-503315	U.S. Patent No. 5,051,261

### CONCLUSION

It is respectfully requested that the above information be considered by the Examiner and that a copy of the attached Form PTO-1449 be returned indicating that such information has been considered.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

/Jason M. Okun/  
 Jason M. Okun  
 Attorney for Applicants  
 Registration No.: 48,512

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FORM PTO 1449 (modified)  U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary)				ATTY DOCKET NO. <b>03500.018109</b>		APPLICATION NO. <b>10/553,221</b>	
				APPLICANT <b>Tetsuya Yano et al.</b>			
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U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		4,358,388	11/09/82	Daniel et al.	252	62.54	
		4,654,267	03/31/87	Ugelstad	428	407	
		4,774,265	09/27/88	Ugelstad	521	55	
		5,200,332	04/06/93	Yamane et al.	435	135	
		2006/0211100 A1	09/21/06	Kenmoku et al.	435	135	
		4,393,167	07/12/83	Holmes et al.	525	64	
		4,477,654	10/16/84	Holmes et al.	528	361	
		4,876,331	10/24/89	Doi	528	361	
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
	WO	2005/121204 A2	12/22/05	International			
	WO	2005/121206 A1	12/22/05	International			
	WO	2004/097417 A1	11/11/04	International			
	WO	2005/121205 A1	12/22/05	International			
	WO	2005/121208 A1	12/22/05	International			
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
		Bruce A. Ramsay et al., "Effect of Nitrogen Limitation on Long-Side-Chain Poly - $\beta$ -Hydroxyalkanoate Synthesis by <i>Pseudomonas resinovirans</i> ," 58(2) <u>Appl. Environ. Microbiol.</u> 744-46 (1992).					
		Hideki Abe et al., "Biosynthesis from Gluconate of a Random Copolyester Consisting of 3-Hydroxybutyrate and Medium-Chain-Length 3-Hydroxyalkanoates by <i>Pseudomonas</i> sp. 61-3," 16(3) <u>Int. J. Biol. Macromol.</u> 115-19 (June 1994).					
		Y.B. Kim et al., "Preparation and Characterization of Poly( $\beta$ -Hydroxyalkanoates) Obtained from <i>Pseudomonas oleovorans</i> with Mixtures of 5-Phenylvaleric Acid and n-Alkanoic Acids," 24 <u>Macromol.</u> 5256-60 (1991).					
		Katharina Fritzsche et al., "An Unusual Bacterial Polyester with a Phenyl Pendant Group," 191 <u>Macromol. Chem.</u> 1957-65 (1990).					
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		5,292,860	03/08/94	Shiotani et al.	528	361	
		5,135,859	08/04/92	Witholt et al.	435	135	
		5,334,698	08/02/94	Witholt et al.	528	354	
		6,635,782 B2	10/21/03	Honma et al.	560	53	
		7,078,200 B2	07/18/06	Honma et al.	435	135	
		6,911,521 B2	06/28/05	Kenmoku et al.	528	295	
		2003/0113368 A1	06/19/03	Nomoto et a.	424	450	
		6,872,788 B2	03/29/05	Imamura et al.	525	440	
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
	WO	2005/121207 A1	12/22/05	International			
	JP	2989175	10/08/99	Japan			Abstract
	JP	2001-78753	03/27/01	Japan			Abstract
	JP	2001-69968	03/21/01	Japan			Abstract
	JP	7-265065	10/17/95	Japan			Abstract
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
		Safwat Antoun et al., "Production of Chiral Polyester by <i>Pseudomonas oleovorans</i> Grown with 5-Phenyl-2,4-Pentadienoic Acid," 3(6) <u>Chirality</u> 492-94 (1991).					
		Joanne M. Curley et al., "Production of Poly(3-Hydroxyalkanoates) Containing Aromatic Substituents by <i>Pseudomonas oleovorans</i> ," 29 <u>Macromol.</u> 1762-1766 (1996).					
		Suzette M. Aróstegui et al., "Bacterial Polyesters Produced by <i>Pseudomonas oleovorans</i> Containing Nitrophenyl Groups," 32 <u>Macromol.</u> 2889-95 (1999).					
		Helmut Ritter et al., "Bacterial Production of Polyesters Bearing Phenoxy Groups in the Side Chains, 1 Poly(3-Hydroxy-5-Phenoxy-pentanoate- co-3-Hydroxy-9-Phenoxy-Nonanoate) from <i>Pseudomonas oleovorans</i> ," 195 <u>Macromol. Chem. Phys.</u> 1665-72 (1994).					
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		6,645,743 B1	11/11/03	Honma et al.	435	146	
		2006/0040366 A1	02/23/06	Kenmoku et al.	435	135	
		2006/0079662 A1	04/13/06	Fukui et al.	528	272	
		2005/0196521 A1	09/08/05	Kozaki et al.	427	2.24	
		7,056,708 B2	06/06/06	Kenmoku et al.	435	130	
		7,135,540 B2	11/14/06	Honma et al.	528	272	
		6,649,380 B1	11/18/03	Yano et al.	435	135	
		4,652,441	03/24/87	Okada et al.	424	19	
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
	JP	4-3088	01/22/92	Japan			Abstract
	JP	5-10808	02/10/93	Japan			No
	JP	9-191893	07/29/97	Japan			Abstract
	JP	59-221302	12/12/84	Japan			Abstract
	JP	5-7492	01/19/93	Japan			Abstract
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
		Young Baek Kim et al., "Poly-3-Hydroxyalkanoates Produced from <i>Pseudomonas oleovorans</i> Grown with $\omega$ -Polyhydroxyalkanoates," 29 <u>Macromol.</u> 3432-35 (1996).					
		Ohyoung Kim et al., "Bioengineering of Poly( $\beta$ -hydroxyalkanoates) for Advanced Material Applications: Incorporation of Cyano and Nitrophenoxo Side Chain Substituents," 41 (Supp. 1) <u>Can. J. Microbiol.</u> 32-43 (1995).					
		Marianela Andújar et al., "Polyesters Produced by <i>Pseudomonas oleovorans</i> Containing Cyclohexyl Groups," 30 <u>Macromol.</u> 1611-15 (1997).					
		Henry J. Vogel et al., "Acetylornithinase of <i>Escherichia coli</i> : Partial Purification and Some Properties," 218 <u>J. Biol. Chem.</u> 97-106 (1956).					
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		4,711,782	12/08/87	Okada et al.	424	455	
		4,917,893	04/17/90	Okada et al.	424	423	
		5,061,492	10/29/91	Okada et al.	424	423	
		5,476,663	12/19/95	Okada et al.	424	423	
		5,631,020	05/20/97	Okada et al.	424	451	
		5,631,021	05/20/97	Okada et al.	424	451	
		6,113,941	09/05/00	Takada et al.	424	451	
		5,656,299	08/12/97	Kino et al.	424	489	
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	JP	2642937	05/02/97	Japan			Abstract
	JP	6-15604 B2	03/02/94	Japan			Abstract
	JP	7-14352 B2	02/22/95	Japan			Abstract
	JP	8-19227 B2	02/28/96	Japan			Abstract
	JP	5-93049	04/16/93	Japan			Abstract
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
		Geoffrey A.R. Nobes et al., "Growth and Kinetics of <i>in vitro</i> Poly[(R)-(—)-3-hydroxybutyrate] Granules Interpreted as Particulate Polymerization with Coalescence," 21 <u>Macromol. Rapid Commun.</u> 77-84 (2000).					
		Robert W. Lenz et al., "Extracellular Polymerization of 3-Hydroxyalkanoate Monomers with the Polymerase of <i>Alcaligenes eutrophus</i> ," 25 <u>Intl J. Biol. Macromol.</u> 55-60 (1999).					
		T.U. Gerngross et al., "Enzyme-Catalyzed Synthesis of Poly[(R)-(—)-3-Hydroxybutyrate]: Formation of Macroscopic Granules <i>in vitro</i> ," 92 <u>Proc. Natl. Acad. Sci. USA</u> 6279-83 (1995).					
		J. Sambrook et al., <u>Molecular Cloning: A Laboratory Manual</u> , 2 <sup>nd</sup> ed., p. 5.72 (1989).					
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		4,954,298	09/04/90	Yamamoto et al.	464	4.6	
		5,330,767	07/19/94	Yamamoto et al.	424	497	
		5,271,945	12/21/93	Yoshioka et al.	424	489	
		5,480,656	01/02/96	Okada et al.	424	439	
		5,643,607	06/01/97	Okada et al.	424	493	
		5,814,342	09/29/98	Okada et al.	424	493	
		4,675,189	06/23/87	Kent et al.	424	490	
		6,117,455	09/12/00	Takada et al.	424	501	
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	JP	1-57087	12/04/89	Japan			Abstract
	JP	8-151322	06/11/96	Japan			Abstract
	JP	8-217691	08/27/96	Japan			Abstract
	EP	0 647 449 A1	04/12/95	Europe			
	EP	1 002 529 A1	05/24/00	Europe			
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		John L. Speier et al., "The Addition of Silicon Hydrides to Olefinic Double Bonds. Part I. The Use of Phenylsilane, Diphenylsilane, Phenylmethylsilane, Amylsilane and Tribromosilane," 78 <u>J. Amer. Chem. Soc.</u> 2278-81(1956).					
		Marjan Nienke Kraak et al., " <i>In vivo</i> Activities of Granule-Bound Poly[(R)-3-Hydroxyalkanoate] Polymerase C1 of <i>Pseudomonas oleovorans</i> : Development of an Activity Test for Medium-Chain-Length-Poly(3-hydroxyalkanoate) Polymerases," 250 <u>Eur. J. Biochem.</u> 432-39 (1997).					
		Q. Qi et al., " <i>In vitro</i> Synthesis of Poly(3-Hydroxydecanoate); Purification and Enzymatic Characterization of Type II Polyhydroxyalkanoate Synthases PhaC1 and PhaC2 from <i>Pseudomonas aeruginosa</i> ," 54 <u>Appl. Microbiol. Biotechnol.</u> 37-43 (July 2000).					
		Ralf Jossek et al., " <i>In vitro</i> Synthesis of Poly(3-Hydroxybutyric Acid) by Using an Enzymatic Coenzyme A Recycling System," 168 <u>FEMS Microbiol. Lett.</u> 319-24 (1998).					
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	JP	2-124814	05/14/90	Japan			Abstract
	JP	4-321622	11/11/92	Japan			Abstract
	JP	4-208217	07/29/92	Japan			Abstract
	JP	61-43119	03/01/86	Japan			Abstract
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
		Masao Yamaguchi et al., "Oxidation of $\omega$ -(Benzoyloxy)alkanols with an Oxoaminium Salt," 55 <u>J. Org. Chem.</u> 1490-92 (1990).					
		Hiroki Okada et al., "Biodegradable Microspheres in Drug Delivery," 12(1) <u>Critical Reviews in Therapeutic Drug Carrier Systems</u> 1-9 (1995).					
		G. Spehnhauer et al., "Formation and Characterization of Cisplatin Loaded Poly(d,l-Lactide) Microspheres for Chemoemobilization," 75(8) <u>J. Pharma. Sci.</u> 750-55 (August 1986).					
		Yuiji Yamamoto et al., "An Experimental Study on the Releasing Rate of Poly (3-Hydroxybutyrate) Microspheres," 7(5) <u>DDS</u> 367-71 (1992).					
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	JP	61-63613	04/01/86	Japan			Abstract
	JP	8-151321	06/11/86	Japan			Abstract
	JP	2-503315	10/11/90	Japan			Abstract
	EP	0 586 238 A2	03/09/94	Europe			
	EP	0 765 660 A2	04/02/97	Europe			
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		Yuiji Yamamoto et al., "An Experimental Study on the Releasing Rate of Poly (3-Hydroxybutyrate) Microspheres - II," 8(2) <u>DDS</u> 131-36 (1993).					
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